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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/632,017	08/02/2000	Jerry Wynn Brimer	NORTH-358G/A-2185 D1	1088

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NORTHROP GRUMMAN CORPORATION
PATENT DEPARTMENT M/S 90/110/CC
1840 CENTURY PARK EAST
LOS ANGELES, CA 90067-2199

EXAMINER

JACKSON, MONIQUE R

ART UNIT PAPER NUMBER

1773

14

DATE MAILED: 02/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/632,017

Applicant(s)

BRIMER ET AL.

Examiner

Monique R Jackson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. The amendment filed 12/5/01 has been entered. New claims 24-25 have been added.

Claims 16-25 are pending in the application.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 16-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Millar et al (USPN 4,027,366.) Millar et al teach a process for electrostatically applying a particulate coating composition to a substrate such as a steel substrate (*hence a metal structure/curing fixture comprising a steel surface having deposited thereon a mixture*), wherein the particulate coating composition comprises a mixture of powders of at least two different coating materials selected from conducting metal or non-metal powders such as zinc, steel or graphite; non-conducting thermoplastic powders such as polyolefins, nylons and other polyamides (*acid-impervious polymer particulate up to about 700°F*); and/or thermosetting polymers like epoxies, acrylics and crosslinkable vinyl polymers; wherein at least one of the powders will be a powder of a film-forming non-conductive organic or inorganic polymer (*powder adhesive*) and wherein the powders may be blended together and then electrostatically deposited in a single operation or step to the substrate to adhere the powder mixture to the surface via contact or static electrification for a reasonable length of time and until at least one of the powders can be cured or fused at a curing temperature from about 140°F to 1500°F, preferably 200°F to 700°F, (*encompassing the instantly claimed temperature ranges*) to form the final coating (*film*) which is at least two distinct layers of different composition wherein one layer may have more than one

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component (Abstract; Col. 2, lines 39-57; Col. 3, lines 45-63; Col. 4, lines 9-14 and 27-28; Col. 5, lines 1-17 and 35-54; Col. 6, lines 25-37, 45-52, and 61-64; Col. 7, lines 19-40 and 52-65.)

4. Claims 16-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Millar et al.

The teachings of Millar et al are discussed above. Given that Millar et al specifically disclose all of the components of the instantly claimed invention with curing temperatures ranging from 140°F to 1500°F, preferably 200°F to 700°F, which encompasses the instantly claimed range, it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize any of the components taught by Millar et al, including any steel substrate material and any polyamide particulate material or curable particulate as disclosed, and to utilize routine experimentation to determine the optimum curing temperature based on the selected components to provide a desired coated substrate for a particular end use. Further, Millar et al also teach that it is generally necessary to choose a particle size for the powders which is not too small in order to provide a surface sufficiently large to receive the electric charge for electrostatic deposition, and not too large because such large diameters generally produce coatings which are not uniformly smooth, hence Millar et al teach that an average particle size of the polymeric materials in the powder admixture will generally be within the range of 10 to 70 microns for electrostatic spraying applications while for other types of electrostatic powder applications, different powders sizes will accordingly be used, as known in the art, and for example, in electrostatic fluidized bed applications, polymer powders may be used having particle sizes within the range of 10 to 300 microns. Hence, though Millar et al does not specifically limit the surface area of the particulate material to 0.008 square inches as in instant claims 24-25, Millar et al clearly teach that particle size/surface area are result-effective variables and hence it would

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have been obvious to one having ordinary skill in the art at the time of the invention to utilize routine experimentation to determine the optimum particle size of the powder materials utilized in the invention taught by Millar et al.

5. Claims 16-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sagawa et al (USPN 5,505,990.) Sagawa et al teach a method of forming a coating on at least one part to be coated by the steps of agitating a mixture including (i) the at least one part to be coated, (ii) a material that forms an adhesive layer on the at least one part to be coated, (iii) impact media, and (iv) multiple compositions of powder material; and fusing at least one of the multiple compositions of powder material at a temperature high enough to fuse at least one of the plurality of powder materials but lower than the fusion point of a second powder material, to produce a part which is covered uniformly with a homogeneous powder-containing coating layer comprising the adhesive material, preferably a thermosetting resin, and at least a portion of the plurality of compositions of powder material; wherein the powders may be resin, metal or inorganic powders and wherein the powder which is not fused by heating is preferably flat with a diameter of 300 μ m or less given that a diameter which exceeds this may affect the uniformity of the film thickness while the effect of the flat powder on the film thickness uniformity is weakened when the diameter is too small (Abstract; Col. 3, lines 23 - Col. 4, lines 30; Col. 5, line 43 - Col. 6, line 16; Col. 6, lines 30-38; Col. 8, lines 25-31; Claims 1-9.) Sagawa et al also teach that the grain size of the powder varies depending on the strength of the vibration or stirring, the size of the part, the thickness of the coating and the material of the powder with sizes ranging from 0.01 to 500 μ m with a smaller size resulting in a smaller surface roughness (Col. 7, lines 7-24.) Though Sagawa et al teach examples wherein structures having metal or steel surfaces are

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coated, Sagawa et al does not limit the type of surface to which the powder mixture is applied or the type of powder materials to utilize as the non-fusing powder, such as acid-impervious polyamide particulate as instantly claimed. However, it would have been obvious to one having ordinary skill in the art at the time of the invention to determine the optimum resin or other powder material to provide the desired coating layer and coating properties on a particular part or surface for a desired end use, utilizing routine experimentation to determine the optimum fusing or curing temperature based on the selected powder materials and utilizing routine experimentation to determine the optimum size of the powder material given that Sagawa et al teach that the size is a result-effective variable.

Response to Arguments

6. Applicant's arguments filed 12/5/01 have been considered but are moot in view of the new ground(s) of rejection.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R Jackson whose telephone number is 703-308-0428.

The examiner can normally be reached on Mondays-Thursdays, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J Thibodeau can be reached on 703-308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



mrj
February 22, 2002



Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700